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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/501,025

04/08/2005

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065435-9115 US00

3623

23409 7590 01/22/2009
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EXAMINER

YOUNG, NATASHA E

ART UNIT

PAPER NUMBER

1797

MAIL DATE

DELIVERY MODE

01/22/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/501,025	Applicant(s) BRIDGWATER ET AL.	
	Examiner NATASHA YOUNG	Art Unit 1797	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 November 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-4, 6-9, and 13-15 are rejected under 35 U.S.C. 102(e) as being anticipated by Green (US 6,830,597 B1).

Regarding claim 1, Green discloses an ablative thermolysis reactor comprising:

(i) a reaction vessel (3), (ii) an inlet into the reaction vessel for receiving feedstock (see figure 1), (iii) an outlet (50) from the reaction vessel for discharging thermolysis product, (iv) within the reaction vessel, an ablative surface (3) defining the periphery of a cylinder, (v) heating means (6) arranged to heat said ablative surface to an elevated temperature, and (vi) at least one rotatable surface (5), the, or each, rotatable surface having an axis of rotation coincident with the longitudinal axis of said cylinder, wherein the rotatable surface is positioned relative to the ablative surface such that feedstock is mechanically pressed between a part of the rotatable surface and said ablative surface and moved along the ablative surface by the rotatable surface, whereby to thermolyze said feedstock (see column 4, line 41 through column 6, line 41 and figure 1).

Regarding claim 2, Green discloses an ablative thermolysis reactor comprising: (i) a reaction vessel (3), (ii) an inlet into the reaction vessel for receiving feedstock (see figure 1), (iii) an outlet (50) from the reaction vessel for discharging thermolysis product, (iv) within the reaction vessel, an ablative surface (3) defining the periphery of a cylinder, (v) heating means (6) arranged to heat said ablative surface to an elevated temperature, and (vi) at least one rotatable surface (5), the, or each, rotatable surface having an axis of rotation coincident with the longitudinal axis of said cylinder, wherein the rotatable surface is positioned relative to the ablative surface such that feedstock is mechanically pressed between a part of the rotatable surface and said ablative surface and moved along the ablative surface by the rotatable surface, whereby to thermolyze said feedstock, and, wherein the reaction vessel is bounded by an inner wall with the ablative surface being defined by an outwardly facing surface of said inner wall (see column 4, line 41 through column 6, line 41 and figure 1).

Regarding claim 3, Green discloses a reactor wherein the, or each, rotatable surface is mounted outwardly of the ablative surface and arranged to press feedstock toward the axis of rotation (see column 5, lines 48-67 and figure 1).

Regarding claim 4, Green discloses a reactor wherein the reaction vessel is bounded by an outer peripheral wall with the ablative surface being defined by an inwardly facing surface of said outer wall (see column 4, line 41 through column 6, line 41 and figure 1).

Regarding claim 6, Green discloses a reactor wherein said ablative surface has a circular or elliptical cross-section perpendicular to the axis of rotation of the, or each, rotatable surface (see figure 1).

Regarding claim 7, Green discloses wherein said at least one rotatable surface (5) is in the form of a rotatable blade (see figure 1).

Regarding claim 8, Green discloses a reactor wherein said heating means is adapted to heat said ablative surface to a temperature in the range of from about 400°C to about 700°C (see column 6, lines 20-41).

Regarding claim 9, Green et al discloses a reactor wherein said heating means is arranged to heat the ablative surface by electrical heating, by the combustion of a solid, liquid or gaseous fuel, by condensation of a vapour, or by circulation of a hot fluid (see column 4, line 41-67).

Regarding claim 13, Green discloses a reactor wherein the, or each, rotatable surface (5) is resiliently biased toward the ablative surface (see figure 1).

Regarding claim 14, Green discloses a reactor wherein a plurality of rotatable surfaces (5) are provided, the rotatable surfaces preferably being equi-angularly displaced about the axis of rotation (see figure 1).

Regarding claim 15, Green discloses a reactor wherein said reactor is provided with a continuous feed mechanism for supplying feedstock into said reaction vessel (see figure 1).

Art Unit: 1797

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 10 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Green (US 6,830, 597 B1).

Regarding claim 10, Green does not disclose a reactor wherein means are provided to adjust the angle of the rotatable surface, or front surface of each blade when present, relative to the ablative surface.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have means that are provided to adjust the angle of the rotatable surface, or front surface of each blade when present, relative to the ablative surface, since it has been held that the provision of adjustability, where need, involves routine skill in the art (see MPEP 2144 (V-D)).

Regarding claim 12, Green does not disclose a reactor wherein means are provided to adjust the spacing between each rotatable surface and the ablative surface.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have means that are provided to adjust the spacing between each rotatable surface and the ablative surface, since it has been held that the provision of adjustability, where need, involves routine skill in the art (see MPEP 2144 (V-D)).

Claims 5 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Green (US 6,830,597 B1) as applied to claims 4 and 10 above, and further in view of Young (US 4,374,704).

Regarding claim 5, Green does not disclose a reactor wherein the, or each, rotatable surface is mounted inwardly of the ablative surface and arranged to press feedstock away from the axis of rotation.

Art Unit: 1797

Young discloses a cylinder (10) of a rotary kiln having the, or each, rotatable surface (26, 27, 28) is mounted inwardly of the ablative surface and arranged to press feedstock away from the axis of rotation (see figures 2-3 and column 2, lines 48-62).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the teachings of Green with the teachings of Young such that the, or each, rotatable surface is mounted inwardly of the ablative surface and arranged to press feedstock away from the axis of rotation to remove material from the inward wall of the cylinder.

Regarding claim 11, Green et al does not disclose a reactor wherein angle adjustment means are provided between each rotatable surface or blade when present.

Young discloses a cylinder (10) of a rotary kiln having the, or each, rotatable surface (26, 27, 28) wherein the end of the levers (26) are pivotally attached to the scraping shoes (27) and the other ends of the levers (26) are weighted such that angle adjustment means are provided between each rotatable surface or blade when present.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the teachings of Green with the teachings of Young such that angle adjustment means are provided between each rotatable surface or blade when present to remove material from the inward wall of the cylinder and to adjust to any increase in material within the cylinder.

Allowable Subject Matter

The indicated allowability of claim 11 is withdrawn in view of the newly discovered reference(s) to Green (US 6,830,597 B1) in view of Young (US 4,374,704). Rejections based on the newly cited reference(s) are discussed above.

Response to Arguments

Applicant's arguments, see Remarks, filed November 26, 2008, with respect to the rejection(s) of claim(s) 1-10 and 12-15 under U.S.C. 103(a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Green (US 6,830,597 B1) and Young (US 4,374,704).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to NATASHA YOUNG whose telephone number is 571-270-3163. The examiner can normally be reached on Mon-Thurs 7:30 am-6:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Walter Griffin can be reached on 571-272-1447. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1797

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/N. Y./

Examiner, Art Unit 1797

/Walter D. Griffin/

Supervisory Patent Examiner, Art Unit 1797